

Pandemic Influenza: Avian Flu Preparedness in New Hampshire

A Briefing for the City and Town Emergency
Response Officials
April 20, 2005



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NH Department of Health and Human Services

Avian Flu

Outline of the Briefing

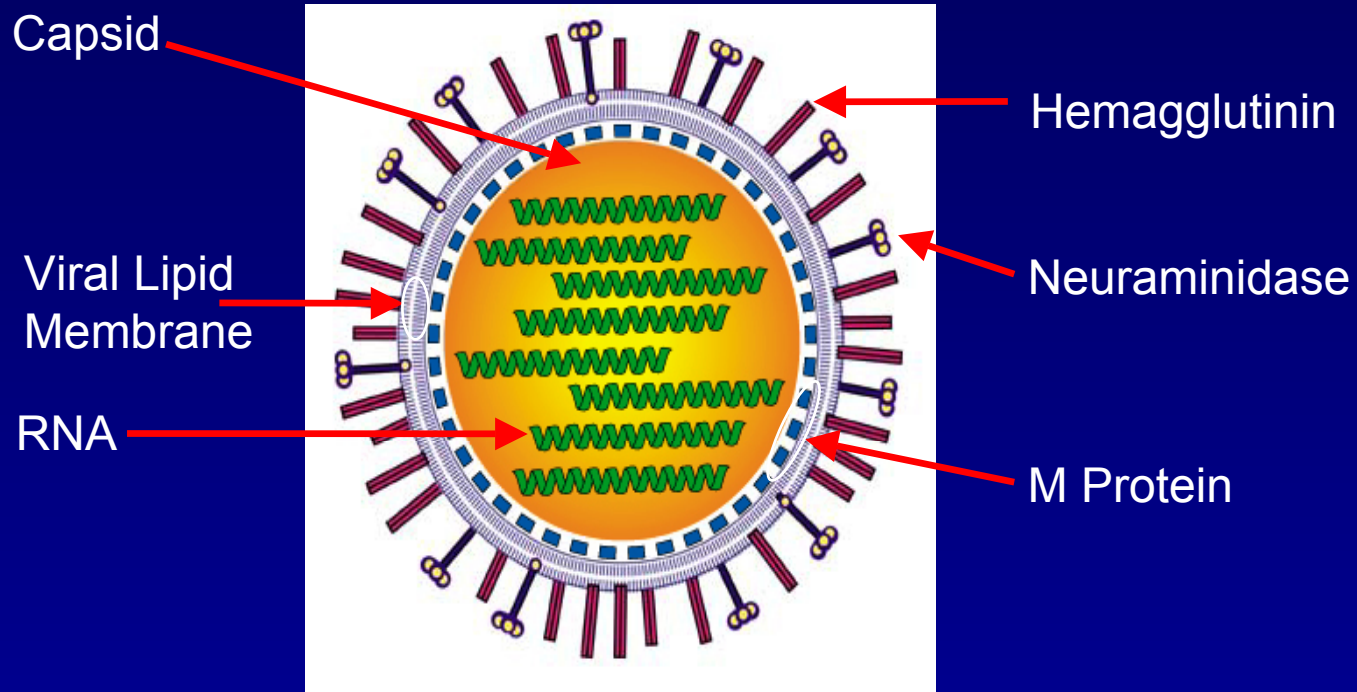
- Overview of influenza
- National preparedness activities
- New Hampshire's preparedness activities
- Questions/Discussion

Overview of Influenza

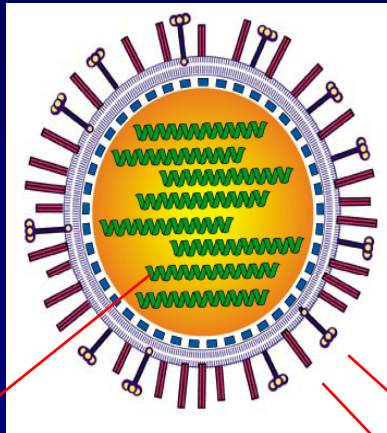
What is Influenza?

- Influenza is an illness caused by a virus.
- The virus is named the Influenza virus.
- The influenza or “flu” virus causes symptoms we think of as a cold.
- There are many other viruses capable of causing cold-like symptoms.

Virus Structure



Viral Nomenclature



Type of Nuclear
Material

Hemagglutinin

Neuraminidase

A / Sydney / 184 / 93 (H3N2)

Virus
type

Geographic
origin

Strain
number

Year of
isolation

Virus
subtype

How is the Virus Transmitted?

- Airborne spread
- May persist hours in the environment
- Direct contact

Are There Different Types of Flu?

- There are a few types of influenza.
 - Influenza A and B are most common
- Influenza is further characterized by the structure of the virus:
 - Influenza A H1N1
 - Influenza A H3N2
 - Influenza A H5N1 – the “Avian Flu”

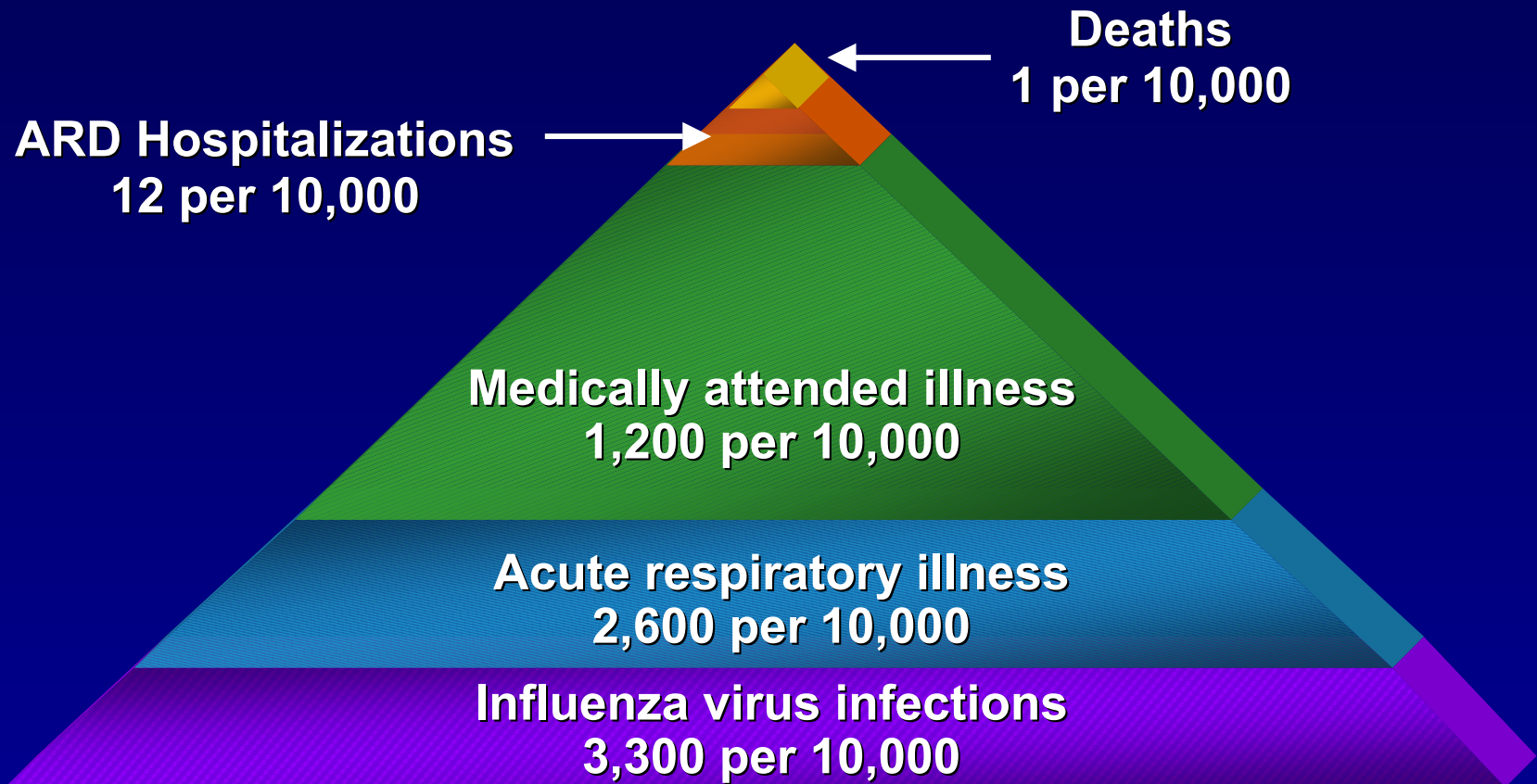
Routine Influenza Season

- Each year the virus circulates throughout the world
- Each year minor changes in the virus occur, triggering the next year's flu season
- In most healthy persons, the immune system protects them from severe disease
- The result is a mild cold

Routine Influenza Season

- The result, however, is far more serious for some people:
 - Elderly
 - Young children
 - Persons with serious medical illnesses
- Each year ~40,000 persons in the US die of “routine” influenza

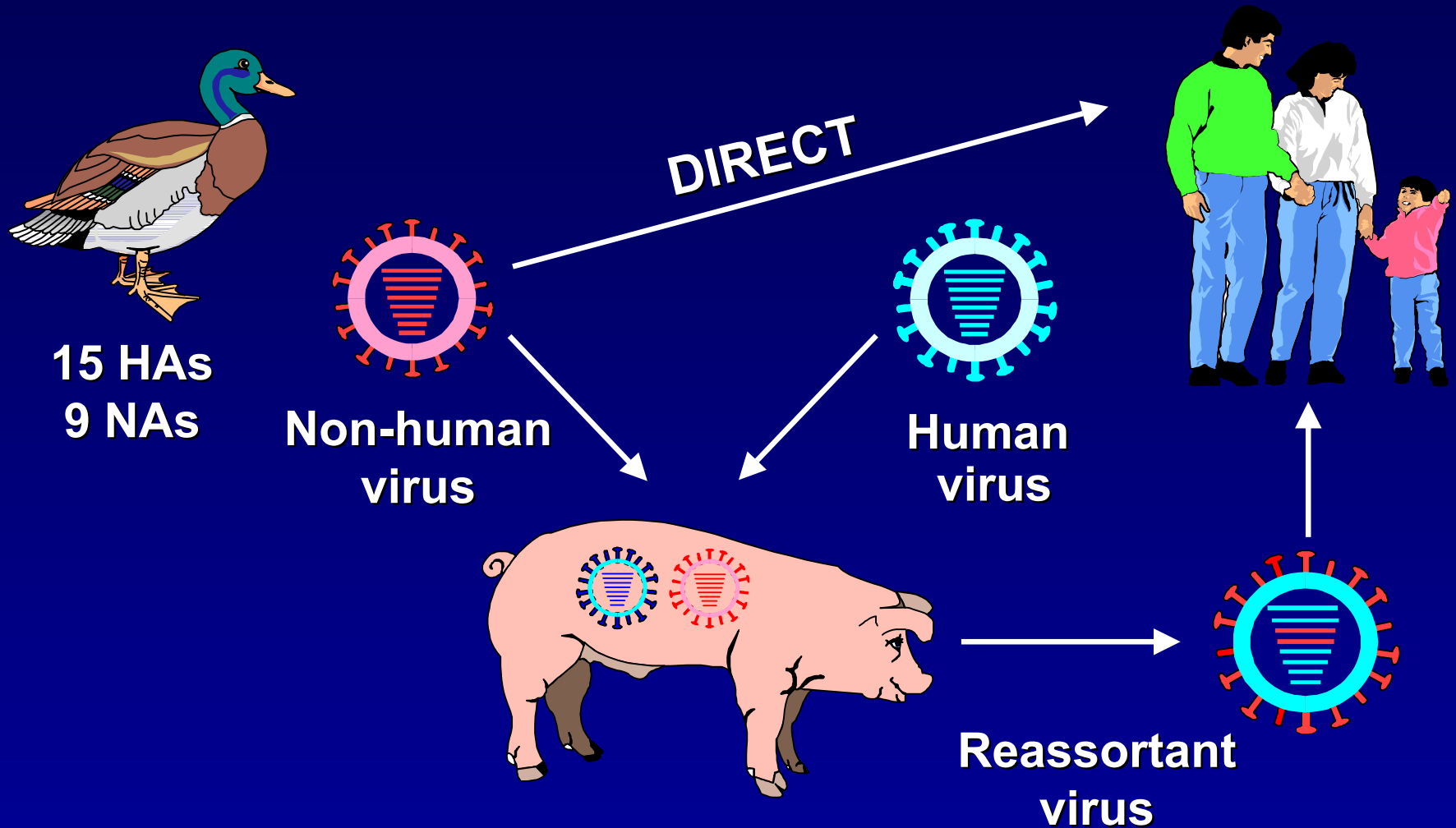
Average Annual Influenza Morbidity and Mortality



What is a Pandemic?

- Emergence & spread of brand new influenza virus
- The new virus emerges from animals, most typically birds
- A pandemic occurs when the virus is able to be transmitted person-to-person and results in widespread outbreaks:
 - (Near) simultaneous global outbreak
 - Elevated rates illness & death

Mechanisms of Influenza Virus Antigenic “Shift”



What is a Pandemic?

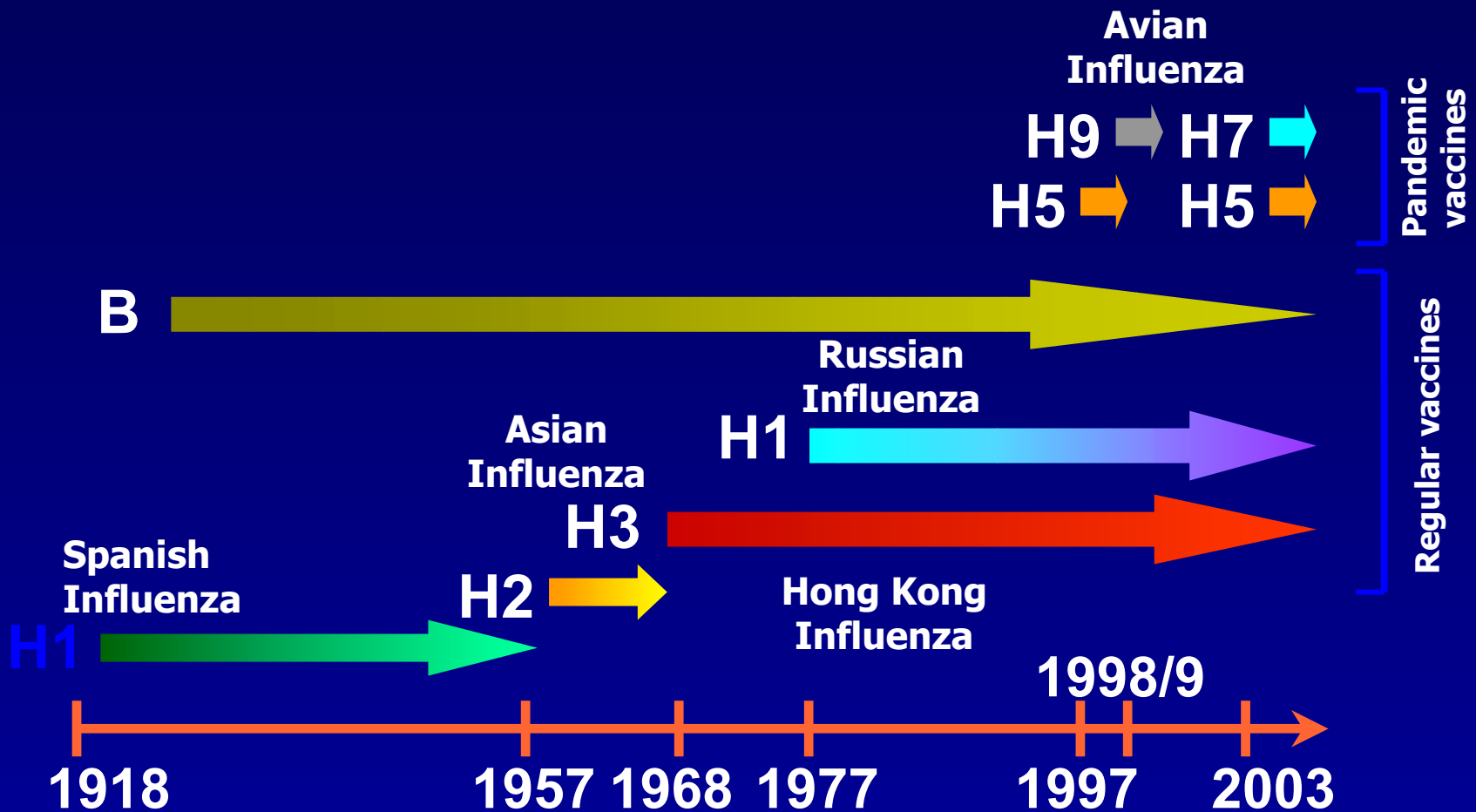
- An Influenza pandemic is not a short term crisis; it may last a couple of years
- An Influenza pandemic will come in waves that may follow each other or overlap

Pandemics & Pandemic Alerts

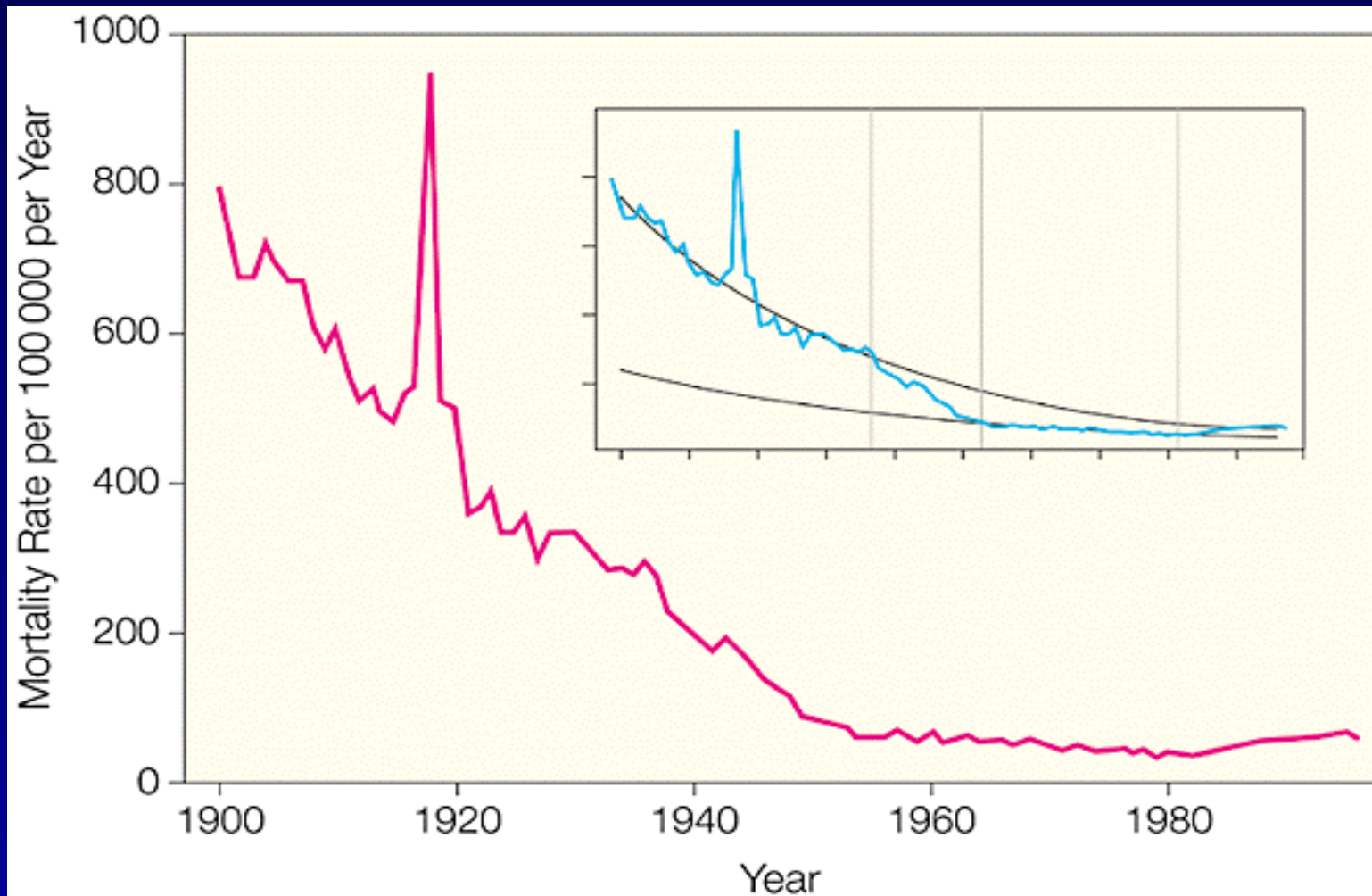
19th - 21st Centuries

- 1891-92 H3
- 1918-19 “Spanish Flu” H1N1
- 1957 “Asian Flu” H2N2
- 1968 “Hong Kong Flu” H3N2
- 1976 Fort Dix “Swine Flu” episode
- 1977 “Russian Flu” H1N1
- 1997 Avian influenza A (H5N1)
- 2004 Avian influenza A (H5N1)

Timeline of Emergence of Influenza Viruses in Humans



Infectious Disease Mortality, United States--20th Century



Armstrong, et al. *JAMA* 1999;281:61-66.

Strategy for the Control and Prevention of Routine Influenza

- Global and national surveillance
 - Monitor activity and impact
 - Identify new viruses for vaccine
 - Detect novel viruses posing a pandemic threat
- Activities to reduce health impact
 - Education
 - Vaccination of those at highest risk for severe illness
 - Use of rapid tests and antiviral agents
 - Investigation and control of outbreaks

National Preparedness Activities for Avian Flu

Key Issues in Planning

- Public and private sector vaccine purchase and distribution
- Priority groups for early vaccine and antiviral chemoprophylaxis and therapy
- Maintaining quality medical care
- Limiting economic impact
- Volunteers and workforce
- Isolation and quarantine enforcement and population based services
- Education and Communication strategies

U.S. Pandemic Influenza Preparedness Activities

- US Pandemic Influenza Preparedness & Response plan was released on August 26, 2004
- Purposes of the plan
 - Define preparedness needs
 - Provide guidance to State/local health departments and health care organizations for planning
 - Outline coordination and implementation of a response
 - Identify key issues that remain to be resolved

U.S. Pandemic Influenza Preparedness Activities

- Enhanced surveillance
- Vaccine security and supply
- Antiviral drugs
- Research activities
- Support to State/local preparedness

Pandemic Planning

- Planning is for the worst case scenario
- Health care system is better able to respond than ever before
- Resources are better coordinated and better prepared at all levels
- New Hampshire has been planning for this since 1997

Potential Avian Flu Impact in U.S.*

- Up to 200 million persons infected
- 38 – 89 million clinically ill
- 18 – 42 million requiring outpatient care
- 314,000 – 733,000 hospitalized
- 89,000 – 207,000 deaths

* Influenza Branch, Centers for Disease Control and Prevention

Current Avian Flu Activity in the World

Current Avian Flu Activities

- Widespread outbreak in Southeast Asia fowl farms
- Most recent country : North Korea
- Culling of birds continues
- No efficient human to human transmission
- Human cases limited to three countries

New Hampshire's Avian Flu Preparedness Activities

Potential Impact in NH*

- Up to 852,000 persons infected
- 168,000 – 384,000 clinically ill
- 72,000 – 180,000 requiring outpatient care
- 1,200 – 3,600 hospitalized
- 360 – 1,000 deaths
 - 200 deaths occur annually from “routine” flu

* Influenza Branch, Centers for Disease Control and Prevention

NH Preparedness

- First Flu pandemic plan produced in 1999
- Plan updated in 2004
- DPHS improved experience in emergency management
 - SARS
 - Smallpox vaccination program
 - Hepatitis A clinics after Taco Bell incident
 - Emergency antibiotic distribution for meningitis cluster
 - 2004 Flu vaccine shortage

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State of New Hampshire

Interim Influenza Pandemic

Epidemiologic and Surveillance Plan



New Hampshire Communicable Disease Epidemic Control Committee

VERSION: July 25, 2004

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NH Preparedness

- Linked closely with state bioterrorism emergency response preparedness activities
- Planning with BEM for Statewide ESF Drill
- Statewide vaccination and surge capacity planning
- Surveillance improvements
- Public Health Laboratory improvements
- Influenza pandemic plan constantly updated by Public Health

Immediate Plans

- Statewide drill to mobilize local clinics
- Hospital surge planning
- Local emergency preparedness
- Legal preparedness
- Laboratory preparation
- Volunteer readiness
- Updates to decision makers

Key Issues

Vaccine Availability

- Availability of vaccine
 - Optimally, first doses for general population available ~4 months after reference strain is developed
 - Weekly delivery of ~3 m doses from U.S. production

Antiviral Drug Stockpile & Availability

- Antivirals in the Strategic National Stockpile
- Antivirals in the private sector

Maintaining Quality Medical Care

- The challenge
 - High demand for services
 - Staff absenteeism
- Health care system planning & preparedness
 - Community-level planning
 - Need for coordination
 - HRSA funding
 - Providing care in non-traditional facilities

Interventions to Decrease Disease Transmission

- Infection control in hospitals and LTCF
 - Respiratory and contact precautions
- Travel restrictions & community strategies
 - Impacts hypothesized but not proven
 - Goal of slowing transmission until vaccine is available

Quarantine/Isolation

- Definitions:
 - Isolation – restriction for those with a disease.
 - Quarantine – restriction for those exposed or incubating disease.
- Authority provided under RSA 141-C

Potential Local Emergency Management Roles

- Conducting vaccination or antiviral clinics
- Supporting hospital surge
- Maintaining isolation/quarantine
- Communications

IT'S TIME AGAIN FOR
EVERYONE'S LEAST FAVORITE
GAME... FEAR OF THE WEEK!

TODAY, WE WELCOME JOHN
SMIDDLES DORF, A DAIRY FARMER
FROM WISCONSIN... JOHN,
GIVE 'ER A SPIN!!



Questions and Discussion